There is this difference, however, as compared with the Dicrurine tail, that in our bird the two extreme feathers are much *smaller* than any of the rest; whence the fork of the tail becomes lessened in depth, these plumes not contributing to it.

The singular assumption of the entire aspect of so remote a genus as *Dicrurus* on the part of this strictly Cuculine bird will, I fancy, be generally considered extraordinary; and has suggested the generic name of *Pseudornis* (ψευδοσ falsus) The *Cuculus lugubris*, although described as having a *wedged* tail, will, I think, be found to have a forked one, and to constitute a second species of our proposed new genus, which will be, in that event, placed on a firm basis.

If it be remarked, that supposing *Lugubris* to have really a forked tail, it is, in fact, specifically identical with our bird, why then the specific name *Dicuroïdes* will merge in that of *Lugubris*, but the new type of form may still claim to be recognised, and surely will do so.

The green glossed black plumage and the forked tail, are as universally the marks of the Dicrurine sub-family as they are, I believe, universally excluded from the *Cuculidæ*.

I am, Sir,
Your most obedient servant,
W. B. HODGSON.

Nepal, March, 1839.

Art. III.—*Report on the Coal and Iron Mines of Tálcheer and Ungool, also remarks on the country through which it was necessary to travel in search of those minerals, the produce, inhabitants, nature of the soil, roads, &c. &c. By* Mr. M. Kittoe, *Curator and Librarian Asiatic Society's Museum.*

March 31*st*, 1838.

All necessary preparations having been made, and assistance received from the superintendent tributary Mehauls, I left Cuttack on the 14th March, in company with Mr. R. Beetson, (contractor for the transport of salt from the coast to Calcutta) and proceeded by regular marches through Dhenkennal, direct from Kuckur on the Mahanuddee to the Brahmenee at Atturva, encamping first at Kuckur Govindpoor, and secondly at Deogaon, under the famous hill of Kuppilás, near to the summit of which, at an elevation of 1000 or 1200 feet, is a fine spring of fresh water, round which are several ancient temples built by Pertaub Rudr Deo, king of Kalinga, in the sixteenth century of the Christian era.

From Atturva we proceeded up the south bank of the Brahmenee to Tálcheergurh, where we arrived on the seventh day, encamping at Nadurra. and Kumalung, the distance travelled being 30 Ooriya coss of $2\frac{1}{2}$ miles to the coss on an average.

We halted one day at Tálcheer, and interchanged visits with the Rája (who is a very intelligent man, and has travelled all over India) likewise his eldest son. I presented the old gentleman with a musical snuff-box, with which he was much delighted.

After duly examining the coal beds I proceeded to Mungulpersád, a stockaded village on the borders of Ungool, the distance seven coss in a westerly direction, over an undulating country, with, generally speaking, indifferent soil and much shingle.

We remained one day at this place, and having inspected the coal beds, &c. returned by a more direct (though crooked enough) route through the states of Tálcheer and Ungool, to the bank of the river (at Mungulpoor) along which we proceeded, via Nadurra, Nágnáth, Chundpál, Kapeepoor, to Kewátbund, near to which place the river enters the plains, throwing off that branch called the Kursooa, which is the only navigable channel to the sea. We reached this place on the 26th, thirteen days from the date of our leaving Cuttack.

The country is neither so mountainous nor jungly as it is represented to be, but for the most part, much neglected; although the soil appears generally good, and productive.

The lands in the immediate vicinity of the Brahmenee are very rich. Great quantities of cotton, sugar-cane, castor-oil plant, linseed, &c. &c. are grown for home consumption, as well as for exportation; the chief profits of which are monopolized by the Mukhteears and Survurakars of the states, who farm the villages from the Rája, and make the most of their bargain by extorting the utmost fraction from the cultivators, who are in fact mere slaves; indeed so are all the inhabitants of these hill provinces; they nevertheless seem happy in their poverty and degraded state.

A great deal of very fine tobacco is grown along the banks and on the muddy deposits of the river, and such lands fetch an exceeding high rent; notwithstanding which the profits on this article of commerce are very great.

Wheat and barley are cultivated in small quantities, and what little I saw appeared to grow most luxuriantly; maize, &c. is also grown on the high lands by the meaner classes, but rice is the chief article of food.

The land in Tálcheer and in Ungool is not so good as in Dherkuomál; and the trees are stunted in growth owing to the shingle,

laterite, and sandstone rocks which are near the surface. There is more jungle and waste land on the opposite side of the river.

From the third march from Atturva to the plains (commencing at Kewátbund) the level lands vary much in extent, the hills in some places coming within 3 or 400 yards of the river, and in others, receding for two or three miles, forming no connected chain, but all more or less isolated (apparently of volcanic origin), the land between them being perfectly level, except where ravines or beds of laterite and kunker occur to interrupt it. At Atturva the hills recede gradually, till at Kurugpursád they branch off in a south-westerly direction, through the state of Hindole into Ungool, towards the Mahanudde; the hills on the opposite side of the river also recede in a north westerly direction towards Keonjur and Bounnaragurh.

Shortly before reaching Kurugpursád the country commences to be undulating, and extensive beds of shingle occur, with red marl. Sandstone rocks are met with at Mungulpoor, protruding through the soil, which are very close grained and white; granite also sometimes occurs in huge detached masses, which have a very singular appearance, particularly at Kukurdung, in Ungool, where they rise in detached blocks of sixteen and eighteen feet in height, and of most fantastic shapes, somewhat resembling the Stonehenge. The land on the north bank of the river is likewise undulating, with rocks. No hills of any magnitude are to be found within twenty or thirty miles of Tálcheer and the coal localities visited by me.

From Tálcheergurh to Mungulpersád, a distance of sixteen miles or more, I saw much shingle and rising ground, on which there is iron ore and laterite, also kunker (calcarious nodules) and sandstone rocks. I observed near the different villages much scattered cultivation beneath the sál and other jungle trees, the underwood having been cleared away; this is the consequence of overtaxing the arable and clear lands, and taking nothing for cultivation of this kind, which is little inferior to the best.

There are no wells, and but few tanks throughout the country. Except in the low lands, in the vicinity of the river, water is very scarce, and what little there is, is of bad quality, particularly in Ungool, where some of the wells and tanks contain naphtha.

There is much waste land overgrown with long grass, which affords excellent pasturage for buffaloes and cows; there are consequently very fine herds of both descriptions of cattle, which are far superior to those of the Mogulbundee (or plains). There are but few goats and sheep.

The people of these states are more artful than even the inhabi-

tants of the plains of Oorissa, who are bad enough. Their craftiness is beyond any thing credible. I have travelled a great deal during my residence in India, and had much intercourse with the different classes of natives, but never did I meet with such provoking knaves as the people of the Gurhját (hill states). It is next to impossible to obtain any correct information even on the most trivial subjects. Every question put by a stranger is considered and re-considered, ere a reply is given, and that, too, is an interrogation as to the object you have in asking it. And should you ask the distance from one place to another, you will be answered at random, or told, "I don't know; I have never been there; I was born in this village; so was my father," and such like;—this is to prevent your asking them to go with you and show the path, and if you take them, they will lead you by the most tortuous route.

I was informed that it is more than any ryot's head is worth to give information regarding the internal economy of the state, or about its resources, or, indeed, on any subject. With such people to deal with, it is not surprising that very little information has been gained by me during such a hurried trip. What I have obtained regarding the Hingolae mines, was from an ascetic, to whom I made a suitable present. I also heard of coal and iron mines in Bumurragurh, from a merchant of Cuttack, and accordingly despatched an intelligent peon to examine them, and to bring specimens, &c.

There is no road along the banks of the Brahmenee, but an irregular and narrow footpath; indeed there are no hackery roads at all. The only road of any consequence is that leading from Cuttack through Dhenkennalgurh, past Kurugpursád and Mungulpoor, and on to Boad; it is tolerably wide and smooth, and is much frequented by Bunjaruhs, who bring cotton, iron, and turmeric in return for salt and tobacco. From Mungulpoor, onwards, the road is nearly due east and west.

Remarks on the Water Carriage for Coal, &c. &c.

The Brahmenee is navigable for good sized boats from the end of June to the middle of December, and sometimes later. Coal could be laden in small canoes and conveyed to Kurugpursád at most seasons of the year indeed. The Dhenkennal boatmen assert that small boats only can navigate the river above that place at any season owing to the numerous rocks; this is however not to be relied upon, for there are but few, which could be removed at a trifling expense.

From Kewatbund (at the edge of the plains) boats and rafts are floated down that branch called the Kursooa.

The furthest point towards the sea to which the coal could be taken is Hunsooagolá, where large sloops anchor. It would be preferable to make this place a depôt, Auligurh being many miles further up the river. It is to these places that Messrs. Beetson's sloops come for salt. There is a bankshall belonging to them at Aul, where sloops are built and repaired. The timber is cut and purchased in Dhenkennal, where it is very cheap, and may be had of any size and quality, viz. sál, sissoo, bijesál, kúrúmb, gírahu, &c. A native contractor offered to carry the coal from Tálcheer to Hunsooagola, at the rate of twenty-five rupees per 100 maunds, or four annas per maund; the boats making three trips each season. The lading is included in this amount. Mr. Beetson however informs me that it could be done for one anna per maund, or, at the utmost, two annas.

From Hunsooa Mr. Beetson would contract to carry the coal to Calcutta, or to any port lower down the coast; and from his experience of the natives of Oorissa, and his industrious habits, I should venture to recommend any contract for the working of the mines, or transport of the mineral, to be offered to him.

The iron mines are worked by the different traders, who give grain, tobacco, and salt, to the value of one rupee per maund of metal. Should the coal mines be worked eventually, it would be necessary to pay for the labour in like manner, for money is unknown to the lower orders; cowries alone are current, and there is a great scarcity of them even. Although there are but few inhabitants, many poor people from the surrounding states would flock to earn food, if proper protection be afforded them. Some difficulty would be experienced at the outset, but that would soon subside.

On the Tálcheer Coal.

That which I shall distinguish by the appellation of "Tálcheer Coal," is found near the town and gurh of that name; the town gives name to the whole district, which is 14 Ooreya coss in circumference, or forty-two English miles, more or less.

Tálcheergurh (the Rája's stockaded palace) and town (called Patna) are situated on the south bank of the river Brahmenee, on a sandstone rock, rising to the height of 20 or 30 feet from the level of the water. The surrounding country is undulating, with a thin stratum of soil resting on shingle, composed of the debris of primitive

rocks, iron clay, jasper, &c. Half a mile or less above the gurh, is a small nullá called, "Billaijooree," about fifteen yards wide, with a sandy bed, and dry except in the rainy season after heavy falls in the interior, where it takes its rise, and winding considerably, joins ultimately with the Brahmenee at this place.

About 400 yards from the mouth of the nullá, coal seams are exposed to view for some distance along the banks, alternately, on either side; these seams vary in quality and thickness, and are curved parallel with the undulations of the superstrata. In almost every place where the coal seams cease abruptly, they will be found to rest against the sandstone.

The superstrata generally consist of alluvial soil, shingle, marl, blue clay passing into peat, mixing with shale and coal of inferior quality, beneath which the good coal is found; this again rests on indurated blue clay containing particles of coal, mica, and fossil plants. The stratum is about 1½ foot thick, beneath which a stiff grey clay mixed with sand and mica, is found.

I made a perpendicular cut in the north bank, at a spot where inferior specimens had been collected by workmen sent some years ago by Mr. G. Becher, executive officer of the division. Having dug down for two or three feet below the surface of the bed of the nullá, I met with a hard blue rock containing particles of coal and fossil plants, in this I bored a hole 1½ foot deep, and blasted it with one pound of country powder, which enabled me to ascertain the thickness, viz. 1½ foot, as before said.

The section thus afforded, gave

Shingle and clay, averaging, ...	10 ft.
Blue clay passing into peat, ...	1½ ft.
Shale, or slaty coal and lignite, ...	1½ ft.
Good glistening coal, ...	1 to 1½ ft.
Grey rock with fossils and coal, ...	1 ft.
Ditto ditto, with mica, ...	6 inches,
Stiff grey clay with mica and sand (?)	

Digging a few feet apart from this spot, in the bed of the nullá, the coal was three feet below the surface, without the peat and clay, &c. and under the opposite bank the coal is several feet deeper still.

I burnt a heap consisting of several maunds of the different kinds mixed together, the whole was consumed, leaving fine white ashes, but no cinder or coke. The glistening or good qualities emitted much gas, and burnt with a bright flame; the remainder soon attained a red heat with less gas—the whole gave out an intense heat.

The bed of coal thus examined is (as will have appeared) very thin,

but I should think that on mining, any quantity could be obtained, and at little cost, from its being so near the surface, and labor cheap in the extreme. It possesses, further, great advantages in being so near to a navigable river.

I shall treat hereafter on the method of working the mines, and of transporting the coal, &c. in a separate paper at the close of my report.

Coal fields of the Hingolai Tacooranee at Mungulpersád.

Of the two coal fields exposed to view, and which were visited by me, that which I have called the "Tacooranee" is the more extensive. It is laid bare by a broad nullá passing through it, called the "Sungurra," it comes from the hills in Ungool, in a south-westerly direction, and is about thirty yards wide, having a sandy bed. The coal appears on either side alternately, for a distance of upwards of a mile, the beds averaging from five to fifteen feet and more in height from the level of the sand. This coal (like that at Tálcheer) rests against the sandstone, and in some places passes into it, apparently mixing with it. The quality of the mineral varies very considerably, as will be seen by the numerous specimens presented to the Committee.

In one spot the coal has apparently been reduced to ash by volcanic action for a space of fifty yards, and upheaved above the common level of the contiguous beds; it is bounded at each extremity by dykes of white rock.

The superstrata vary in kind and thickness; in some places there is blue clay, above which is marl and shingle; in others, simply marl and iron ore, laterite, and shingle, and frequently but a thin stratum of clay. At the spot where the "Tacooranee" (goddess) called "Hingolai" is supposed to preside, the coal is entirely bare for a space of 1000 or 1200 yards (superficial) with an undulating surface. It is at this place that at the full of the moon of Chát-Byesk, the priesthood set fire to a heap of coal, which they keep burning for three successive days, commencing the day preceding the full of the moon, when hundreds of deluded creatures flock from the surrounding country to worship the goddess of destruction, who is supposed thus to shew her presence in the burning rock. I was unable to ascertain how far up the nullá the coal is exposed to view, as the inhabitants of one state will say nothing about their own country, and still less about that of another Rája; and as the Ungool territory is only half a mile distant, without any alteration in the general appearance of the country, which is undulating, I did not deem it necessary

to proceed further. There was sufficient coal at this place to afford an ample supply for the next century.

The cost here of working either the coal or iron mines would be the same as at Tálcheer, it would, however, be necessary to construct a road (perhaps a rail road) to the river side, a distance of sixteen or eighteen miles, but perhaps less in a direct line. The nullá is not navigable at any season, however from the tolerably level nature of the country it might be rendered so for two or three months, by constructing dams and locks at convenient distances. At all seasons water is found from one to three feet below the surface of the sand; this prevented my ascertaining the actual depth of the coal measures and the quality of the lower veins.

Note on the Iron Mines.

Iron ore is found in great abundance both in Tálcheer and in the adjacent states of Ungool and Dhenkennal. There are iron works in each, and the Cuttack and Berhampoor markets are supplied by them. Some of the iron is of a superior and malleable quantity, but much of it is very coarse-grained and brittle, the prices vary accordingly.

I saw the remains of several iron works on the road between Tálcheer and Mungulpersád, the "Lohorás," or iron workers, having forsaken them last year in consequence of the famine, and subsequent pestilence (cholera) which almost depopulated the country.

The process of smelting the ore is the same as that pursued in other parts of India, and which therefore it will be superfluous for me to describe.

Had I met with any iron workers I would have tried to smelt the ore with coal, as it is abundant on the surface at the coal mines, as I have before mentioned.

A great quantity of iron is made in the Sumbulpoor state also.